

WHAT IS CLAIMED IS:

1. A stage apparatus, comprising:
 - a first stage;
 - plural electromagnet units that generate a moving force in a predetermined direction to said first stage by application of electric current to an exciting coil;
 - application means for selectively applying the electric current to the exciting coil of said plural electromagnet units, based on a moving force and its direction to be applied to said first stage; and
 - control means for, upon application of the electric current to the exciting coil by said application means, determining directions of the electric current to be applied to respective exciting coils so as to reduce a leak magnetic field around said first stage.
2. The stage apparatus according to claim 1, wherein said application means selects electromagnet units to be driven from said plural electromagnet units, and determines amounts of the electric current to be applied to the respective selected electromagnet units, and wherein said control means determines the directions of the electric current applied to the respective selected electromagnet units based on positions of the respective selected electromagnet units,

further wherein the electric current is applied, in the determined amounts and in the determined direction, to the respective selected electromagnet units.

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3. The stage apparatus according to claim 1, further comprising a second stage, holding said plural electromagnet units and said first stage, that moves within a plane,

10 wherein said plural electromagnet units generate a moving force to said first stage, on said second stage.

4. The stage apparatus according to claim 3, wherein
15 said application means selects electromagnet units to be driven based on a control signal to move said second stage.

5. A control method for a stage apparatus, having a
20 first stage, plural electromagnet units that generate a moving force in a predetermined direction to said first stage by application of electric current to an exciting coil, comprising:

an application step of selectively applying the
25 electric current to the exciting coil of said plural electromagnet units, based on a moving force and its direction to be applied to said first stage; and

a control step of, upon application of the electric current to the exciting coil by said application means, determining directions of the electric current to be applied to respective exciting coils so as to reduce a leak magnetic field around said first stage.

6. The control method according to claim 5, wherein at said application step, electromagnet units to be driven are selected from said plural electromagnet units, and the amounts of the electric current to be applied to the respective selected electromagnet units are determined,

and wherein at said control step, the directions of the electric current applied to the respective selected electromagnet units are determined based on positions of the respective selected electromagnet units,

further wherein the electric current is applied, in the determined amounts and in the determined directions, to the respective selected electromagnet units.

7. The method according to claim 5, wherein said stage apparatus further comprises a second stage, holding said plural electromagnet units and said first stage, that moves within a plane,

and wherein at said application step, the moving force to be applied to said first stage and its direction are determined based on a control signal to move said second stage.

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8. An exposure apparatus having the stage apparatus according to claim 1, which performs exposure processing on a photoresist substrate placed on said first stage.

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9. A device manufacturing method including the step of performing exposure processing on a substrate using the exposure apparatus according to claim 8.

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